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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/001,241	11/15/2001	Ulrich Bley	(10111227)	9275

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FULBRIGHT & JAWORSKI, LLP
666 FIFTH AVE
NEW YORK, NY 10103-3198

EXAMINER

PARSLEY, DAVID J

ART UNIT PAPER NUMBER

3643

DATE MAILED: 04/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/001,241	BLEY ET AL.	
	Examiner	Art Unit	
	David J Parsley	3643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Amendment

1. This office action is in response to applicant's request for reconsideration dated 3-8-04 where applicant's arguments were persuasive and a new grounds of rejection has been set forth as seen below.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the ignition gases" in line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As seen in lines 10-11, it is unclear to whether the radial openings or the combustion chamber is being claimed as disposed in the ignition tube.

Claims 2-9 depend from rejected claim 1 and include all of the limitations of claim 1 thereby rendering these dependent claims indefinite.

Claim 4 recites the limitations "said discharge chamber" and "said discharge openings" each in line 4. There is insufficient antecedent basis for these limitations in the claim.

Claim 4 recites the limitation "the direction of flow" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitations "said discharge openings" and "said blow-out openings" in lines 1-2. There is insufficient antecedent basis for these limitations in the claim.

Claim 8 recites the limitation "the blow-out openings" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "said afterburning chamber" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-6 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S.

Patent No. 6,253,683 to Fukabori.

Art Unit: 3643

Referring to claim 1, Fukabori discloses a gas generator comprising, an inner tube – see the tube connected to the inner wall of item 14 in figure 1, and an outer tube – at 14, arranged concentrically one in the other, the inner tube forming a combustion chamber, containing fuel – at 4, and being closed with a cover plate – at 10 including the portion surrounding the one end of tube – 20, and an end plate – proximate the end of tube – 20 opposite igniter – 3 as seen in figure 1, an igniter tube – at 20, extending through the combustion chamber and joining the cover plate to the end plate – see figure 1, an ignition element – at 3, disposed in the cover plate, the ignition element having an outlet opening for the ignition gases in communication with the igniter tube – see figure 1, a longitudinal displaceable piston – at 21, disposed in the igniter tube, the igniter tube having radial openings – at 19, into the combustion chamber disposed therein, the igniter tube being joined in the end plate to an outlet – proximate 15 as seen in figure 1.

Referring to claim 3, Fukabori discloses the piston is joined to the cover plate with a break away edge – see for example figure 1.

Referring to claim 4, Fukabori discloses wherein an area for receiving the piston is disposed in the discharge chamber – at 15, behind the discharge openings – at 12 and/or 17 and/or 32 and/or 22, in the direction of flow – see for example figure 1.

Referring to claim 5, Fukabori discloses the number of radial openings – at 19, in the igniter tube – 20, increases toward the outlet opening – proximate 15 – see for example figure 1.

Referring to claim 6, Fukabori discloses discharge openings – at 12, 17, 19, 32 and proximate 15, are disposed in the outer tube – see figure 1.

Referring to claim 8, the limitations of wherein after ignition of the ignition element the piston tears open the blow-out openings constitutes functional language and does not add any

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further structural limitations to the claims and therefore has no bearing on the patentability of the claims as seen in, *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959) and MPEP section 2114.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukabori as applied to claim 1 above, and further in view of U.S. Patent No. 6,491,321 to Nakashima.

Referring to claim 2, Fukabori further discloses a discharge chamber – at 15, is disposed in the end plate – see figure 1, the outlet of the igniter tube – at 20, opening into the discharge chamber – see figure 1, the discharge chamber being connected through openings – at 22 or at the end of 15 opposite the ignition tube, to an after burning chamber – at 2 or 11 or 24-26. Fukabori does not disclose the discharge chamber being connected through blowout openings to an afterburning chamber disposed between the outer tube and the inner tube. Nakashima does disclose the discharge chamber – proximate 305b, being connected through blowout openings – at 320, to an afterburning chamber – proximate 305a, disposed between the outer tube – at 301-302, and the inner tube – proximate 314 – see for example figure 22. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Fukabori and add the

afterburning chamber and discharge chamber of Nakashima, so as to allow for the generated gas to quickly and efficiently leave the device.

Referring to claim 9, Fukabori does not disclose cooling elements disposed in the afterburning chamber. Nakashima does disclose cooling elements – at 350 – see for example figure 22 and column 37 lines 45-64. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Fukabori and add the cooling elements of Nakashima, so as to allow for the cooling means to expand and contract to allow for selective movement of the generated gas in the device.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukabori as applied to claim 1 above, and further in view of U.S. Patent No. 6,007,097 to Rink et al. Fukabori does not disclose the discharge openings and the blow out openings are closed by a membrane. Rink et al. does disclose the discharge openings – a portion of the openings at 40, and the blow-out openings – a different portion of the openings at 40, are closed by a membrane – see for example column 3 lines 25-29. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Fukabori and add the openings closed by a membrane of Rink, so as to only allow gas to leave the openings after ignition and firing of the device.

Response to Arguments

5. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to gas generating devices in general:

U.S. Pat. No. 3,813,007 to Doin et al. – shows gas-generating device

U.S. Pat. No. 5,345,876 to Rose et al. – shows gas-generating device

U.S. Pat. No. 5,427,030 to Kidd et al. – shows gas-generating device

U.S. Pat. No. 5,462,307 to Webber et al. – shows gas-generating device

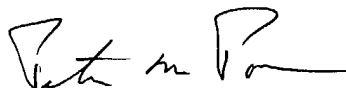
U.S. Pat. No. 5,746,445 to Johnson et al. – shows gas-generating device

U.S. Pat. No. 6,481,357 to Lindner et al. – shows gas-generating device

U.S. Pat. No. 6,499,764 to Anacker et al. – shows gas-generating device

7. Any inquiry concerning this communication from the examiner should be directed to David Parsley whose telephone number is (703) 306-0552. The examiner can normally be reached on Monday-Friday from 7:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon, can be reached at (703) 308-2574.



Peter M. Poon
Supervisory Patent Examiner
Technology Center 3600

4/1/04